West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-09900009-2012**
Application Received: **November 7, 2011**
Plant Identification Number: **03-54-09900009**
Permittee: **Ashland Inc.**
Facility Name: **Ashland Performance Materials / Neal Plant**
Mailing Address: **100 Big Sandy River Road, Kenova, WV 25530**

Physical Location:	Neal, Wayne County, West Virginia
UTM Coordinates:	360.8 km Easting • 4,247.7 km Northing • Zone 17
Directions:	On the west side of Big Sandy River Road, 0.9 miles south of the junction of Big Sandy River Road with Interstate 64.

Facility Description

Maleic anhydride is produced by catalytic partial oxidation of n-butane. This is accomplished by passing a gas mixture consisting of atmospheric air (approximately 98%) and commercial grade butane (approximately 2 percent) over a proprietary vanadium phosphate catalyst.

SIC:
2865 Chemicals-Allied Products, Cyclic Crudes-Intermediates

Operating scenarios:

(1) Normal operation of facility with thermal oxidizer as the primary control device.

(2) Operation without thermal oxidizer emissions to the abatement scrubber. This scenario addresses plant operations in the event the primary control device (thermal oxidizer) is off-line due to maintenance activities or malfunction. When the incinerator is not operational, air emissions from the reactors would include CO and VOCs. The VOC stream consists primarily of methane, ethane, propane, butane, and acrylic acid. The vent stream from the batch refiner would also be directed to the abatement scrubber. This stream consists primarily of xylene.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]

Regulated Pollutants	Potential Emissions	2010 Actual Emissions
Carbon Monoxide (CO)	598.0	191.11
Nitrogen Oxides (NO_X)	13.2	0.784
Particulate Matter (PM_{10})	0.9	0.411
Total Particulate Matter (TSP)	0.9	0.411
Sulfur Dioxide (SO_2)	9.5	0.485
Volatile Organic Compounds (VOC)	69.0	12.123

PM_{10} is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2010 Actual Emissions
Acrylic Acid	5.41	0.0966
Benzene	0.22	0
Maleic Anhydride	5.85	0.2139
Xylenes (isomers and mixtures)	5.59	1.0371 (Ortho-xylene)
Total HAPs	17.07	1.3476

HAPs may be counted as part of VOCs.

Title V Program Applicability Basis

This facility has the potential to emit 598 TPY of Carbon Monoxide. Due to this facility's potential to emit over 100 tons per year of a criteria pollutant, Ashland Inc. is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR6	Open burning prohibited.
	45CSR7	Control of Fugitive Particulate Matter
	45CSR10	Sulfur dioxide emissions.

	45CSR11	Standby plans for emergency episodes.
	45CSR14	Permit #R14-0008K
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	WV Code §22-5-4(15)	Testing
	45CSR§21-39	Air Oxidation process in SOCMI
	45CSR30	Operating permit requirement.
	40 C.F.R. Part 60 Appendix F	Quality Assurance Procedures
	40 C.F.R. Subpart VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry
	40 C.F.R. 60 Subpart III	VOC emissions from Synthetic Organic Chemicals Manufacturing Industry Air Oxidation Unit Process
	40 C.F.R. Part 61 §§61.145, 61.148, 61.150	Asbestos inspection and removal
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances
State Only:	45CSR4	No objectionable odors.
	45CSR§21-37	LDAR

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit *(if any)*
R14-0008K	May 5, 2006	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

Determinations and Justifications

Changes to the July 24, 2007 Title V Permit consists of the following:

1) The company name changed from "Marathon Domestic, LLC" to "Ashland Inc.", and also "Ashland Performance Materials" description was added to the plant name, therefore corresponding changes were made in the permit.

2) Requirement 3.1.12 – revised Part 60 Subpart VV set of requirements to reflect regulatory changes in Subpart VV that were finalized after previous permit was issued.

3) Requirements 3.1.13.b, 4.1.1 (footnote), 4.1.5, 4.1.6, 4.2.2.a.3 and c.2 language was revised to match exactly the language of the underlying R14-0008K requirements.

4) Requirement 4.1.7 - added applicable "45CSR§10-4.1" citation, which was overlooked before.

5) Requirement 4.1.8 - added applicable "45CSR§6-4.1" citation, which was overlooked before.

6) Requirement 4.2.4 – visual emission checks method "45CSR§§7A-2.1.a, b" was replaced with Method 9 because the Thermal Oxidizer B-800 is not subject to 45CSR7, but is subject to 45CSR§6-4.3.

7) Since Ashland Inc. has not submitted any applications for a modification under PSD after January 2, 2011 the requirements of the Greenhouse Gas Tailoring Rule do not apply.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

1. 40CFR60 Subpart E - *Standards of Performance for Incinerators*. The Neal plant incinerator is not used to burn solid waste.

2. 40 CFR60 Subpart Kb - *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction or Modification Commenced after July 23, 1984.*
   Per § 60.110b(b) the Subpart doesn't apply to the facility. Tanks F-400, F-330, F-412, F-413, M-1410A, M-1410B, F-414, F-601, F-602 are not subject to this Subpart because of their size and maximum true vapor pressure characteristics. Butane pressure vessels TK-101, TK-102, TK-103 are exempted from the requirements of this Subpart because they are designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

Below is the Subpart Kb applicability table revised since the initial permit was issued in 2002 based on the Subpart Oct. 15, 2003' revision. Before, recordkeeping was applicable to the Crude MAN Tank F-330, but now the tank is also exempt from the requirements of this Subpart.

Subpart Kb applicability Table

Emission Unit Description	Design Capacity	Kb capacity threshold	Maximum true vapor pressure	Kb max true vapor pressure threshold	Year Installed/ Modified	Kb applicability
Forecut Tank F-400	15,231 gal (57.7 m^3)	< 75 m^3	3 kPa	NA	09/30/1976 / 1998	No
Crude MAN Tank F-330	51,700 gal (195.7 m^3)	> 151 m^3	2.7 kPa	< 3.5 kPa	10/02/1994 / 1998	No
Xylene Cut Tank F-413	16,900 gal (64 m^3)	< 75 m^3	1.37 kPa	NA	09/30/1976 / 1998	No
MAN Product Tank F-412	51,700 gal (195.7 m^3)	> 151 m^3	0.1 kPa	< 3.5 kPa	09/30/1976 / 1998	No
Waste Maleic Acid Tank M-1410A	18,000 gal (68.2 m^3)	< 75 m^3	0.01 kPa	NA	09/30/1976 / 1998	No
Waste Maleic Acid Tank M-1410B	18,000 gal (68.2 m^3)	< 75 m^3	0.02 kPa	NA	09/30/1976 / 1998	No
Process Water Tank F-414	62,500 gal (236.6 m^3)	> 151 m^3	1.3 kPa	< 3.5 kPa	09/30/1976 / 1998	No
MAN Product Storage Tank F-601	156,100 gal (591 m^3)	> 151 m^3	0.1 kPa	< 3.5 kPa	09/30/1976 / 1998	No
MAN Product Storage Tank F-602	156,100 gal (591 m^3)	> 151 m^3	0.1 kPa	< 3.5 kPa	09/30/1976 / 1998	No
Pressurized Butane Tank TK-101	31,900 gal (120.8 m^3)	NA	1,378.95 kPa	> 204.9 kPa	09/30/1976 / 1998	No
Pressurized Butane Tank TK-102	31,900 gal (120.8 m^3)	NA	1,378.95 kPa	> 204.9 kPa	09/30/1976 / 1998	No
Pressurized Butane Tank TK-103	44,500 gal (168.5 m^3)	NA	1,723.69 kPa	> 204.9 kPa	1982 / 1998	No

3. 40CFR60 Subpart DDD - *Standards of Performance for Volatile Organic Compound (VOC) Emissions From the Polymer Manufacturing Industry*. The Neal plant does not produce polymers.

4. 40CFR60 Subpart NNN - *Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations*. The Neal plant's distillation process is designed and operated as a batch operation, so it is exempted per section 60.660 (c) (3).
5. 40CFR60 Subpart RRR - *Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes*. The Neal plant is manufacturing MAN by air oxidation process, so it is not subject to this Subpart, but is subject to Subpart III instead.

6. 40CFR60 Subpart DDDD - *Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units that Commenced Construction On or Before November 30, 1999* the Neal plant incinerator is not used to burn solid waste.

7. 40CFR61 Subpart F - *National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene.* The Neal plant has benzene waste in gas/vapor form only, therefore the plant is exempt from requirements of this subpart per 61.340(c)(1).

8. 40CFR61 Subpart J - *National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene.* The Neal plant does not operate in "benzene service", because its equipment contacts a fluid that contains less than 10 percent benzene by weight. The raw butane feed into the system contains less than 1 percent of the benzene by weight; then before reaction process butane flow gets diluted with air at more than 50 to1 dilution rate, so benzene content of the process fluid drops even less. Facility is required to keep on site the quarterly butane analysis to demonstrate compliance with the process fluid benzene content.

9. 40CFR61 Subpart BB - *National Emission Standard for benzene emissions from Benzene Transfer operations.* The Neal plant is not a subject to this subpart, because it is not a benzene production facility or a bulk terminal.

10. 40CFR63 Subpart A - *National Emission Standards for Hazardous Air Pollutants for Source Categories. General Provisions*. This subpart is not applicable because the Neal plant is not a major source of HAPs (facility has aggregate HAP emissions less than 25 TPY and single HAP emissions less than 10 TPY at maximum operating conditions).

11. 40CFR63 Subpart B - *Requirements for Control Technology Determinations for Major Sources in Accordance With Clean Air Act Sections, Sections 112(g) and 112(j)*
This subpart is not applicable because the Neal plant is not a major source of HAPs.

12. 40CFR63 Subpart F - *National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry*. This subpart is not applicable because the Neal plant is not a major source of HAPs.

12. 40CFR63 Subparts G - *National Emission Standards for Organic Hazardous Air Pollutants for Synthetic Organic Chemical Manufacturing.* The Neal plant is not subject to these subparts, because the plant is not a major source of HAPs.

14. 40CFR63 Subpart H - *National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks*. This subpart is not applicable because the Neal plant is not a major source of HAPs.

15. 40CFR63 Subpart I - *National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks.* The Neal plant is not a major source of HAPs, therefore the Subpart is not applicable.

16. 40CFR63 Subpart Q - *National Emission Standards for Organic Hazardous Air Pollutants for Industrial Process Cooling Towers.* The Neal plant cooling towers are not subject to this subpart, because the plant is not a major source of HAPs.

17. 40CFR63 Subpart EEEE - *National Emission Standards for Organic Hazardous Air Pollutants*
for Organic Liquid Distribution (non-Gasoline). The Neal plant is not a major source of HAPs, therefore the Subpart is not applicable.

18. 40CFR63 Subpart FFFF - *National Emission Standards for Organic Hazardous Air Pollutants*
for Miscellaneous Organic Chemical Manufacturing. The Neal plant is not a major source of HAPs, therefore the Subpart is not applicable.

19. 40CFR63 Subpart DDDDD - *National Emission Standards for Organic Hazardous Air Pollutants for Industrial/Commercial/Institutional Boilers and Process Heaters.* The Neal plant is not a major source of HAPs, therefore the Subpart is not applicable.

20. 45CSR27 - *To Prevent and Control the Emissions of Toxic Air Pollutants*. The Neal plant is not subject to this rule, because its benzene emission rate is less than 1000 lbs/yr.

21. 40CFR63 Subpart JJJJJJ - *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* - Neal plant is not subject to this MACT because there is no equipment (thermal oxidizer, reactors, refiner) that fits definition of "boiler".

40CFR64 Compliance Assurance Monitoring (CAM) Plan – here are five PSEU at the facility: Reactors 208, 209, 210 and 211, and Refiner 410. They are vented to the Thermal Oxidizer B-800.

The reactors are limited for both CO and VOC emissions (requirement 4.1.1). Based on the 97% oxidizer destruction efficiency for CO, before control PTE for CO for each reactor is 4,983.3 TPY. Based on the 98% oxidizer destruction efficiency for VOC, before control PTE for VOC for each reactor is 862.5 TPY. CAM applies for both CO and VOC limitations, but here are continuous compliance determination methods specified in the permit: CO CEM monitoring (requirements 4.2.1, 4.2.3, 4.4.1.b and 4.4.3) and combustion temperature monitoring to demonstrate compliance with the VOC emission limit (the oxidizer combustion temperature is measured at least every 15 min, and averaged on an hourly basis - requirements 4.2.1, 4.1.4, 4.4.1.c, 4.4.2 and 4.5.1), therefore these emission limitations are exempt from the requirements of CAM (per 40C.F.R.§64.2(b)(vi)).

The Refiner 410 is limited for Xylene emissions (requirement 4.1.1). Based on the 98% oxidizer destruction efficiency for Xylene, before control PTE for Xylene is 279.5 TPY, therefore CAM is potentially applicable. Since Xylene is HAP, and also is part of VOC emissions, the continuous oxidizer combustion temperature monitoring for compliance with the VOC limit should be satisfactory for compliance with the Xylene limit as well, therefore this emission limitation is exempt from the requirements of CAM (per 40C.F.R.§64.2(b)(vi)).

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: April 4, 2012
Ending Date: May 4, 2012

All written comments should be addressed to the following individual and office:

Natalya V. Chertkovsky-Veselova
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Point of Contact

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Response to Comments (Statement of Basis)

Not applicable.